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STANDARDS FOR ESTIMATING STANDARDIZATION OF UNITS *and* METHODS FOR MEASURING *on* BUILDING CONSTRUCTION WORK



Issued by the
Building Trades Employers' Association of Boston
1 Beacon Street, Boston, Mass.

RULES FOR ESTIMATING STANDARDIZATION OF UNITS *and* METHODS FOR MEASURING *on* BUILDING CONSTRUCTION WORK



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FOREWORD

About two years ago, after several talks at the Master Builders' Association on "Quantity Surveys," it was deemed advisable, whatever builders generally might think of this method of estimating, to formulate some "Standard Units" and "Methods for Measuring" building quantities.

Messrs. ISAAC F. WOODBURY,
CHARLES LOGUE and
ARTHUR W. JOSLIN

were appointed a Committee in the matter, and the following system of units and rules for measurements are the result of their work.

These rules have been submitted to and approved by a Joint Committee of Architects and Builders.

If estimators will consistently follow them it will be a long step forward in the direction of uniformity in a matter that has been handled in about as many ways as there are estimators.

The BUILDING TRADES EMPLOYERS' ASSOCIATION OF BOSTON feels that it is for the benefit of the building industry to disseminate this information in the hope that surveyors of building materials from architects' and engineers' plans will make use of the system of units and rules for measuring herein set forth.

It was therefore voted by the BUILDING TRADES EMPLOYERS' ASSOCIATION OF BOSTON, at its regular quarterly meeting held October 3, 1917, to print this compilation of rules and distribute copies to its members and others interested in improving conditions in the building business.

March, 1918.

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"GENERAL OR OVERHEAD" EXPENSES

Contractors' attention is particularly called to the following items of "General or Overhead" expenses.

The costs to be used against such of these items as occur in jobs will have to be determined by the judgment of the contractor, as they are of such a nature that it is impossible to put them on a "Unit of Measure" basis.

It is intended that the contractor's proposal shall include all expense in connection with any, or all, of these items unless Especially Eliminated by the specifications.

- No. 1. Bond.
- No. 2. Quantity Survey.
- No. 3. Liability Insurance.
- No. 4. Fire Insurance.
- No. 5. Permits. (Building, Sidewalks, etc.)
- No. 6. Telephone.
- No. 7. Superintendent.
- No. 8. Time Keeper.
- No. 9. Watchman and Lights.
- No. 10. Engineering and Extra Drawings.
- No. 11. Batter Boards.
- No. 12. Traveling Expenses and Board.
- No. 13. Water: Temporary Piping and Building Uses.
- No. 14. Derricks, Engine and Special Machinery.
- No. 15. Concrete Plant.
- No. 16. Small Tools.
- No. 17. Temporary Office.
- No. 18. Sheds, Lockers and Privy.
- No. 19. Temporary Closing of Building.
- No. 20. Temporary Heating and Lighting.

RULES FOR ESTIMATING

- No. 21. Protection and Repairs to Streets and Side-walks.
- No. 22. Protection and Repairs to Adjoining Property.
- No. 23. Protection of Completed Work.
- No. 24. Cleaning out Building.
- No. 25. Cleaning Glass.
- No. 26. Carting Debris.
- No. 27. Cutting and Jobbing for Other Trades.
- No. 28. Fences, Barricades, Trestles and Walks.
- No. 29. Moving Pipes and Wires.
- No. 30. Inspectors; Piles; Concrete.
- No. 31. Guarantee Work.
- No. 32. Photographs.

EXCAVATION

1. Clearing site. Brush, Trees, etc.	}	Matters of judgment for which no standard of measurement can be applied.
2. Clearing site. Razing Buildings.		
3. Pumping and Baling.		
4. Shoring Banks. (Unit of Measure, Square Foot.)		
5. Open Excavation. (Unit of Measure, Cubic Yd.)		
6. Trench Excavation. (Unit of Measure, Cubic Yd.)		
7. Miscellaneous Excavation—Cesspools, Drywells, Manholes, etc. (Unit of Measure, Cubic Yard.)		
8. Rock Excavation. (Unit of Measure, Cubic Yd.)		

Rules for Measuring.

- No. 1. Measurements to be always taken 1'-0" outside of walls, except where projection of footings requires a greater distance to be excavated.

No. 2. Where a cement or waterproof coating is specified for the outside of walls, measurements to be taken 2'-0" outside of walls.

No. 3. When it is a known fact that banks will have to be shored, measurements to be taken 2'-0" outside of walls where excavation is 10'-0" or less below natural grade, and 1'-0" additional for each 10'-0", or fraction thereof, below said depth.

No. 4. Depth of excavation to be taken to the under side of concrete cellar floor, except in case of a broken stone, cinder, or other similar fill under said floor, in which case, depth to be taken enough deeper to permit of said filling.

No. 5. Excavations for footings, small pits, etc., below general depth as per Rule 4, to be measured as "Trench Excavations."

No. 6. All trenches for drains, pipes, retaining walls, and foundations of all kinds where enclosed space is not excavated to be measured as "Trench Excavations."
Report separately all trench excavation in connection with piles.

No. 7. Rock Excavation. Quantity to always be determined by an actual survey of premises before the work is performed.
All boulders of 1 cu. yd. or more in size to be considered "Rock Excavation."

No. 8. Rock Excavation to always be paid for at an agreed price per cubic yard.

Shoring Excavations.

Rule. 1. Report surface area of all banks in both Open and Trench excavations, reporting

separately areas of depths as follows: from 5 to 10 ft., 10 to 15 ft., 15 to 20 ft., etc.

Rule 2. Open and Trench excavations to be reported separately.

BACK FILLING

(*Unit of Measure,—Cubic Yard.*)

Rule 1. Back Filling shall be assumed to be the cubage of space between the outside of foundation walls of a structure and the face of the excavation; the filling in around trench walls and similar foundations, and the filling in of trenches after pipes, wires, etc., are laid, from bottom of excavations up to natural grade.

Rule 2. Where back filling is of any material other than that derived from the excavation, attention to be called to the fact, and the kinds of materials required to be reported separately.

ROUGH GRADING

(*Unit of Measure,—Cubic Yard.*)

Rule 1. This item is intended to cover the disposition of the excavated, or purchased, rough materials around the premises, and within the bounds set by the plans and specifications, necessary to bring the grounds to the sub-grade required to make them ready for Finished Grading.

FINISHED GRADING AND LANDSCAPE WORK

Loaming. (*Unit of Measure,—Cubic Yard.*)

Rule 1. Contractor to use his own judgment as to whether all or any part of this loam is derived from the excavation.

Seeding. (*Unit of Measure,—Square Foot.*)

Rule 1. Compute and report actual area to be seeded.

Sodding. (*Unit of Measure,—Square Foot.*)

Rule 1. Compute and report actual area to be sodded.

Rule 2. Contractor to use his own judgment as to whether any or all sods are derived from the site.

Planting. (*No Unit of Measure.*)

Rule 1. Unless this item is covered by an allowance, schedule and number of Trees, Shrubs, etc., to be given together with such particulars as to size as possible.

Watering and Attendance. (*No Unit of Measure.*)

Rule 1. Estimator to quote from specifications stating amount of this service called for.

Walks and Driveways. (*Unit of Measure,—Square Foot.*)

Rule 1. Give actual area of Walks and Driveways separately, each item being accompanied by a description of the construction called for.

DRAINS

(*Unit of Measure,—Linear Foot.*)

[Note—Excavation provided for under head of
“Trench Excavations.”]

- Rule 1. Report separately each kind and size of drainage pipes.
- Rule 2. Report number of Elbows, Bends, Ts, Ys, and traps, that the surveyor can foresee is necessary to install drains as shown or specified.

DRAINAGE ACCESSORIES

Manholes, Traps, Wells, Cesspools, Dry Wells, etc.

[Note—Excavation provided for under the head of
“Miscellaneous Excavations.”]

- Rule 1. Report number and size of any of above items entering into this operation.
- Rule 2. Where possible give, in proper units, materials required for the construction of each of any of the above items entering into this operation.

STONE FOUNDATIONS

(*Unit of Measure,—Cubic Feet.*)

- Rule 1. As near as possible to obtain them from a scale plan, net cubical contents to be computed.
- Rule 2. No corners to be measured double, and all openings to be taken out at their full scale, or figured, size.
- Rule 3. Each kind and quality of stone work to be reported separately.

- Rule 4. Give composition of mortar.
- Rule 5. If outside of walls are plastered with cement, are tar or asphalt coated, or treated in any manner other than ordinary pointing, give particulars and report area in square feet.
- Rule 6. If there is a damp course in any or all walls give particulars, and report square feet.

CONCRETE FOUNDATIONS

(*Unit of Measure,—Cubic Feet.*)

- Rule 1. As near as possible, from scale plans and figures thereon, compute the actual cube of Concrete.
- Rule 2. No corners to be measured double, and all openings to be taken out at their full scale, or figured, size.
- Rule 3. Each different mixture of concrete to be reported separately, and composition of mixture to be given.
- Rule 4. Give total area in square feet, of forms required to carry out the work as planned together with particulars in regard to stock of which said forms are to be built.
- Rule 5. If concrete has any form of metal reinforcement report number of pounds in case of rods or bars, and number of square feet if any kind of mesh material, giving trade name, size, laps and weight per square foot.
- Rule 6. If any part of the concrete has any finish other than as it comes from the forms, report area of said finishes in square feet.

Rule 7. If any waterproofing compound, or process, is incorporated in the concrete, give full particulars.

Rule 8. If outside of walls are tar or asphalt coated, give particulars and report area in square feet.

Rule 9. If there is a damp course in any or all walls, give particulars and report square feet.

STONE ASHLAR

(*Unit of Measure,—Square Foot, Face Measurement.*)

Rule 1. As near as possible, from scale plans and figures thereon, compute actual face area.

Rule 2. All openings, and space occupied by Terra Cotta, Cut Stone Trimmings, etc., to be taken out at full scale or figured dimensions.

Rule 3. Perimeter of Buttresses, chimneys and other similar parts, and reveals of all openings in excess of 4", to be included in the computations.

Rule 4. Give particulars in regard to kind of stone, style of work, size of joints, method of cleaning and pointing and composition of mortar.

Rule 5. All of above rules are intended to cover the several classes of stone ashlar produced from ledge or quarry stone of all kinds, where all, or a greater part, of the shaping of the stone is done on the stage, or at the site of the building, by Stone Masons. If

the stone is delivered at the building all cut and ready to set mention the fact but give number of face feet computed according to Rules 1—2—3.

Rule 6. If ashlar is backed up by any material other than brick, report net cubic feet of said backing, together with particulars in regard to kind of material, composition of mortar, etc.

CONCRETE FLOORS

(*Unit of Measure,—Square Foot.*)

Rule 1. Compute actual net areas, giving thickness, composition, top finish, jointing, construction of foundation upon which floors are built, etc., reporting each kind separately.

Rule 2. If any part of the concrete floors have any form of metal reinforcement give particulars as per Rule No. 5 under the head of "Concrete Foundations."

Rule 3. If any part of concrete floors have screeds report same, giving size and spacing of screeds and thickness and composition of filling. Quantity and Quality of "Screeds" to be reported under that heading in "Carpenter Work."

Rule 4. In case of Tar, a Concrete, Asphalt or other similar floor materials give areas and particulars according to Rules 1—2—3.

Rule 5. Do not measure any suspended concrete construction under this heading, except small areas over trenches and ducts, reporting the area of these separately.

[Note—See Rule 6, under head of "Reinforced Concrete."]

See Rule 3, under head of "Brick Paving.")

SUNDRY CONCRETE WORK

Steps	{	<i>Unit of Measure,—Linear Foot.</i>
Copings		
Gutters		
Base Courses		
Window Sills		
Lintels		
Thresholds		
Belt Courses		
Cornices		
Chimney Caps	{	<i>Unit of Measure,—Square Foot.</i>
Manhole Covers		
Trap Well Covers		
Trench Covers		
Step Buttresses	{	<i>Unit of Measure,—Cubic Foot.</i>
Concrete Stairs		

- Rule 1. Report each item separately and give sectional area or dimensions. State mixture of concrete and give particulars as to finish of exposed parts, reinforcement, etc.
- Rule 2. Give particulars, or make sketches, to show rabbets or any other variation from true rectangular section.

PILES

(*Report Number.*)

- Rule 1. Give number, size, kind of wood and such particulars as to length as possible.
- Rule 2. If piles are of concrete give sectional area,

Particulars as to shape, reinforcement, mixture of concrete, and such information as to length as is possible.

Rule 3. In case of either wood or concrete piles, state how driven.

SHEET PILING

(*Report Linear Feet.*)

Rule 1. Give thickness, kind of wood and such particulars as to length as possible.

Rule 2. Unless otherwise provided, length of sheet piling to be assumed to be the whole depth of the excavation.

REINFORCED CONCRETE

Floor and Roof Construction, etc. (*Unit of Measure,—Square Foot.*)

Rule 1. Compute actual net areas as near as possible from scale plans and figures thereon.

Rule 2. Take out all openings of 4 square feet or more, at their actual scale or figured size.

Rule 3. Floor to be assumed to be continuous over all structural steel or reinforced concrete beams and girders.

Rule 4. Where there are different mixtures, thicknesses and reinforcements, report each kind separately.

Rule 5. If reinforcement is of rods or bars report pounds per foot of floor and give size and spacing of same. If of any kind of mesh material give trade name, size, laps, and weight per square foot.

Rule 6. All work above the actual structural slab

to be surveyed and reported under head of "Concrete Floors." See note under head of "Concrete Floors."

Rule 7. Forms. Report square feet, taking out of the area of floors and roofs as surveyed under Rules 1—2—3, the area of the top all steel or concrete girders or beams supporting said floors or roofs. Give particulars as to kind and sizes of stock required for forms, if specifications make any requirements in regard to same.

Girders, Beams and Columns. (*Unit of Measure,—Cubic Foot.*)

Rule 1. Girders and Beams to be cubed to the under side of floor slabs. Columns to be cubed from top of slab at bottom to the under side of slab, or girder, at top.

Rule 2. Give particulars as to reinforcement and report quantity of same in pounds.

Rule 3. If there are different mixtures report cubage of each separately.

Rule 4. Forms. Report square feet of forms giving particulars as to kind and sizes of stock if specifications make any requirements in regard to same.

Rule 5. Form measurements to be actual face feet of column perimeters outside of fireproofing, and girder and beam perimeters below floor or roof slabs outside of fireproofing.

Rule 6. If there is any finish on the concrete other than as it comes from the forms, or plastering, give particulars and area in square feet. This rule to apply to the under side

of slabs as well as to columns, girders and beams.

CUT STONE

Used as Building Trim. (*Unit of Measure,—Cubic Foot.*)

Used as Ashlar. (*Unit of Measure,—Square Foot.*)

- Rule 1. All trimming members of moulded or irregular outline to be cubed as though rectangular, using the greatest dimension each way.
- Rule 2. Give particulars as to size of joints, kind of mortar for setting, method of cleaning and pointing and method and materials for anchoring.
- Rule 3. In case of ashlar give the average depth of stone in the wall.
- Rule 4. Give particulars, or allowances, for models and carving.
- Rule 5. If stones are damp proof painted on back, ends, beds and builds report square feet and trade name of material.

ARCHITECTURAL TERRA COTTA

(*Unit of Measure same as for Cut Stone.*)

Rules 1—2—3 as for Cut Stone.

Rule 4. Give particulars as to models for ornamental work.

BRICK WORK

Common Brick. (*Unit of Measure,—Cubic Foot.*)

Rule 1. Quantity to be net cubic feet computed as

accurately as possible from scale plans and figures thereon.

- Rule 2. Corners not to be measured double. All window openings to be taken out at their scale or figured "brick opening" height and 8" wider than their scale or figured "brick opening" width.
- Rule 3. Cubage of all stone trim back of the ashlar line and built into common brick to be taken out.
- Rule 4. Cubage occupied by steel shapes imbedded in wall to be taken out unless same are filled in between and around with brick.
- Rule 5. In case of Terra Cotta trim, with cells filled with brick to the ashlar line, take out 20% of the cubage of terra cotta back of the ashlar line.
- Rule 6. Cubage of brick in piers, chimneys and rough fireplaces to be reported separately.
- Rule 7. State composition of mortar, size of joint and method of bonding.

Hollow Brick
Fire Brick } (*Unit of Measure,—Cubic Foot.*)

Compute and report according to Rules 1 to 7 inclusive for Common Brick.

Face Brick. (*Unit of Measure,—Square Foot.*)

- Rule 1. Compute net square feet as accurately as possible from scale plans and figures thereon.
- Rule 2. Windows, doors, and all other openings to be taken out at their full scale or figured face opening sizes.

- Rule 3. In all cases where window, door, or other opening reveals are more than 4", the excess over said 4" to be included in the survey.
- Rule 4. All space occupied by trimmings of any kind to be deducted from the survey.
- Rule 5. Measurements to all re-entering angles to be taken 4" longer on one side than actual face measurements.
- Rule 6. Ground, cut, or specially made arch brick, to be surveyed in square feet, the depth of the reveal over 4" being added to the survey. Sketches to be given when necessary to make matters clear.
- Rule 7. Bull noze, octagon corner, or any similar special shaped brick, to be reported in linear feet. Sketches of shapes to be given with survey.
- Rule 8. Space occupied by brick coming under Rules 6 and 7 to be taken out of the Face Brick survey.
- Rule 9. Give particulars as to kind and quality of brick, size of joints, method of bonding, washing and pointing, and composition of mortar.
- Rule 10. If there are several kinds of face, glazed or similar brick, the net face feet of each kind to be given separately.

Brick Paving. (*Unit of Measure,—Square Foot.*)

- Rule 1. Survey actual net area as near as possible from scale plans and figures thereon.
- Rule 2. When there are several kinds of brick paving, or the paving is on different bases.

give area of each kind separately and describe bases.

Rule 3. If the base is of concrete same should be surveyed under "Concrete Floors." (See note under "Concrete Floors.")

Rule 4. Give particulars as to kind and quality of brick and whether laid flat or edgeways, in sand, mortar, pitch, asphalt, or any other material.

Finished Fireplaces.

Rule 1. Give number, sizes, kinds of brick or tile, particulars as to dampers and dumps, etc. Give sketches if necessary to make matters clear.

Rule 2. If any fireplaces are entirely of tile or marble except firebox and underfire, describe brick parts, dampers and dumps, and see that marble or tile work is called for under these headings in specification. If not called for there give brief description and call particular attention to this discrepancy.

Rule 3. If fireplaces are covered by allowance, disregard all measurements and quantities and state sum of said allowance.

Flue Linings. (*Unit of Measure,—Linear Foot.*)

Rule 1. Give linear feet of each kind and size.

Rule 2. Unless otherwise provided in the specifications, or shown on plans, linings in ordinary flues are to be assumed to run from the basement floor to the top of the chimney, and in fireplace flues from a point 5

feet above the floor where fireplace occurs to the top of the chimney.

Chimney Pots.

Rule 1. Give number, size and other necessary particulars.

Brick Nogging and Fire Stopping. (*Unit of Measure,—Cubic Foot.*)

Rule 1. Report net cubage as near as possible to obtain same.

Brick Range and Boiler Setting.

Rule 1. Give quantity of materials in proper units and such particulars as necessary to make matters clear.

STRUCTURAL TERRA COTTA

Floors and Roofs. (*Unit of Measure,—Square Foot.*)

- Rule 1. Compute area as accurately as possible from scale plans and figures thereon.
- Rule 2. Take out all openings for ducts, chimneys, stair and elevator openings, etc., of 4 sq. ft. or more. Structural members that are 1'-0" or more in width between webbs to be taken out.
- Rule 3. State nature of arches, whether flat or segmental, side or end construction, thickness, and give composition of mortar.
- Rule 4. Report each kind and thickness of construction separately.
- Rule 5. For screed filling, or concrete floors over arches, see Rule 3 under head of "Concrete Floors."
- Rule 6. Report area of forms in square feet and

give particulars as to kind and thickness of stock, if specifications make any requirements in this matter.

Beam and Column Fireproofing. (*Unit of Measure,—Square Foot.*)

- Rule 1. In computing areas use perimeters, or circumference, of columns outside of fireproofing, and perimeter of beams below the floor arches and outside of fireproofing.
- Rule 2. Show by sketches nature of the fireproofing for columns and beams, and give composition of mortar.

Truss Members.

- Rule 1. If possible to put on sq. ft. basis do so. If not make sketches and give necessary particulars.

Book Tile. (*Unit of Measure,—Square Foot.*)

Rules 1-2 as for floors and roofs.

- Rule 3. Give size, thickness and composition of mortar.

Partitions and Wall Furring. (*Unit of Measure,—Square Foot.*)

- Rule 1. As for floors and roofs.
- Rule 2. In computing "outs" for doors figure width 6" and height 4" more than size of door as shown, scaled or figured. In computing "outs" for windows allow for weight boxes and bucks if they occur. All other openings of 4 sq. ft. or more to be taken out at their full scale or figured dimensions.
- Rule 3. Report each different thickness or kind of blocks and furring separately and give composition of mortar.

Rule 4.. In case of Terra Cotta blocks used for "Nogging" or Fire Stopping report square feet as near as possible to compute same.

COMPOSITE CONSTRUCTION

Floors and Roofs and Plaster Block Partitions and Furring.

Rule 1. Use same units and same Rules for measurements as for "Structural Terra Cotta," where same can be made to apply. In case of the concrete parts of the construction, use units, and Rules for measurements, as for "Reinforced Concrete."

FRAME

(*Unit of Measure,—One Foot Board Measure.*)

Rule 1. Each item of frame such as Sills, Girders, Columns, Isolated Posts, Floor Joists, Rafters, Collar Beams, etc., to be scheduled separately; also exceptional lengths and sizes.

Rule 2. All frame in Trusses to be given as a separate item.

Rule 3. All frame in the walls of a frame structure except sills, to be reported as "Wall Frame."

Rule 4. All lengths of frame lumber shall be measured in feet of length. Where length is of a certain number of feet and some inches, it shall be measured in whole feet next above exact length. Thus 15 pieces of 2"x12"—13'-9" long would be measured as follows: 2"x12"—15/14'.

Rule 5. Due allowance to be made, in scheduling lengths, for tenons, splices, etc., the length shown, required, or known as necessary being added to the actual length, subject to Rule 4.

Rule 6. Every sub-division of the schedule as per Rule 1 to be computed into Board Measure Feet (net) and the kind and grade of lumber to be stated. Any dressing, adzing, chamferring or crowning, to be stated and fully explained.

Notice: That certain classes of "Frame," where stock is lighter than 2"x6", are to be surveyed under the head of "Studding." See Rules 3 and 4 under "Studding."

STUDDING

(*Unit of Measure,—Square Foot.*)

[Note—Studding in walls of frame structures are provided for by Rule 3, under the head of "Frame."]

Rule 1. All partitions, irrespective of size and spacing of studding, to be computed into square feet net.

Rule 2. Furring of Masonry walls with stock 2"x3" or larger to be considered and measured as "Studding."

Rule 3. Collar beams and hung ceilings, when stock is of smaller material than 2"x6", to be scheduled under this heading (Studding), but reported as "Collar Beams" or "Hung Ceilings."

Rule 4. Stock for furred-up roofs, when stock is of smaller material than 2"x6" to be sched-

uled under this heading (Studding) but reported as "Furred-up Roofs."

Rule 5. All openings in frame 100 sq. ft. or more to be taken out at their actual scale or figured dimensions. Openings less than 100 sq. ft. to be disregarded.

Rule 6. Each size and different spacing of studding, collar beams, hung ceilings, and furred-up roofs to be scheduled separately. Give kinds and grades of lumber and give all particulars in regard to sizing, planing, bridging, etc.

FURRING

(*Unit of Measure,—Square Foot.*)

Rule 1. Compute all areas to be furred as accurately as possible from scale plans and figures thereon, and report square feet.

Rule 2. Curved and other irregular surfaces to be reported separately and particulars given.

Rule 3. Give all possible particulars in regard to kind and size of furring, spacing, nailing, etc.

Rule 4. Each kind, size and spacing to be reported separately.

Rule 5. Furring on masonry walls to be reported separately. See Rule 2 under the head of "Studding."

Rule 6. Furring around pipes, for false beams, for plaster cornices, or for any purpose other than set forth in Rules preceding, to be reported in either square or linear feet, as seems most logical, and to be accompanied by sketches.

BOARDS

(Unit of Measure,—Square Foot.)

- Rule 1. Compute areas to be covered as accurately as possible from scale plans and dimensions thereon.
- Rule 2. Take out all openings of 4 sq. ft. or more at their full scale or figured dimensions.
- Rule 3. Floors, Roofs, Walls, etc., to be reported separately.
- Rule 4. Give particulars as to kind and quality of lumber, widths, thicknesses, planing, matching, whether laid straight or diagonally, nailing, etc.

Plank. (*For Floors, Roofs, etc.*)

Rules 1—2—3—4 as above.

- Rule 5. Give multiples of length, and if splined, size of and kind of wood for splines.

Boards and Planks. (*Used for purposes other than above.*)

Rules 1—2—3—4—5 as above.

- Rule 6. State the several separate uses to which stock is put, together with surface area of quantity in each case.

UPPER FLOORS

(Unit of Measure,—Square Foot.)

- Rule 1. Compute areas to be floored as accurately as possible from scale plans and figures thereon.
- Rule 2. Take out all openings of 4 sq. ft. or more at their full scale or figured dimensions.
- Rule 3. Give particulars as to kind and quality of

lumber, lengths, widths, thicknesses, jointing, matching, smoothing and nailing.

- Rule 4. Each kind and quality to be reported separately.
- Rule 5. Give particulars as to kind, or kinds, of paper over which flooring is laid and state what form of protection floors are to have after being laid.
- Rule 6. Porch or Piazza floors to be surveyed as above, but reported separately.
- Rule 7. Slat floors on concrete floors and flat roofs to be surveyed as above but reported separately, particularly as to size and spacing of sleepers being given. The sleepers for such floors not to be surveyed under the head of "Studding."

SCREEDS

(*Unit of Measure,—Linear Foot.*)

- Rule 1. Compute as accurately as possible from scale plans and figures thereon the net linear feet of Screeds required.
- Rule 2. Give particulars as to the size, spacing, kind of wood, and make sketch of shape.
[Note—For concrete or other filling between screeds see Rule 3 under head of "Concrete Floors."]

WINDOWS

(*Unit,—A Complete Window except Architraves and Hardware.*)

- Rule 1. Give count of windows; mullions, triples, etc., being counted two, three, etc.

- Rule 2. Make as many items of the count as there are materially different kinds of windows.
- Rule 3. Where there are a number of windows of a given type, but of varying sizes, state average size.
- Rule 4. In case of a very few windows of a given type, make schedule of sizes.
- Rule 5. Make such sketches as may seem necessary to make matters clear.
- Rule 6. Give particulars as to wood, thickness, glazing, blinds, etc.
- Rule 7. If hardware is an allowance of a certain sum for windows, or various sums for the several types of windows, state said sum, or note each division of the schedule with the amount per window applicable to it.
- Rule 8. Unless otherwise provided in the specification, finished, or trimming, hardware for windows shall not be assumed to cover pulleys, chain or cord, and weights.

CEILING LIGHTS

(Unit of Measure,—Square Foot.)

- Rule 1. Report total number of square feet and give number of separate ceiling lights.
- Rule 2. Give all particulars as to wood, thickness, glazing, etc., and show by sketches how cut up into lights by muntins.

DOORS

(Unit,—A Complete Door except Architraves and Hardware.)

- Rule 1. Give count of doors, pairs being counted

as 2, and groups of doors counted 1 for each leaf.

- Rule 2. Make as many items of count as there are different kinds of doors as regards thickness, kind of wood, pattern, etc.
- Rule 3. Doors having transoms over, heavy or panelled jambs, special glazing, etc., to be listed separately and fully explained.
- Rule 4. Where there are a number of doors of a given type, but of varying sizes, state average size.
- Rule 5. In case of only a very few doors of a given type, make schedule of sizes.
- Rule 6. Make such sketches as may seem necessary to make matters clear.
- Rule 7. If hardware is an allowance of a certain sum per door, or various sums for the several types of doors, note each division of the schedule with the amount per door applicable to it.

SHINGLES

(*Unit of Measure,—Square Foot.*)

- Rule 1. Compute as accurately as possible from scale plans, and figures thereon, the area to be covered.
- Rule 2. Take out all openings of 4 square feet or more.
- Rule 3. In case of roofs report separately in linear feet, the hips, valleys, eaves, ridges, and dormer or other "cheeks."
- Rule 4. In case of walls report separately, in linear feet, the belts, window and door heads,

water-table, etc., and any parts of exterior finish requiring flashing.

- Rule 5. Roof and wall surfaces to be reported separately.
- Rule 6. Give all particulars in regard to kind and quality of shingles, distance laid to the weather, flashing, paper and nails.
- Rule 7. If shingles are dipped in stain of any kind before laying, give area of shingles so treated, together with trade name or description of stain.

CLAPBOARDS

(*Unit of Measure,—Square Foot.*)

- Rule 1. Compute as accurately as possible from scale plans, and figures thereon, the area to be covered.
- Rule 2. Take out all space occupied by doors, windows, and outside finish of any kind, of 4 square feet or more.
- Rule 3. State kind and quality of wood, thickness, distance to the weather, nails, paper, flashing, etc.
- Rule 4. Report separately in linear feet the door and window heads, belts, water-table, etc., and any other parts requiring flashings.

OUTSIDE FINISH

Cornices. (*Unit of Measure,—Linear Foot.*)

- Rule 1. To the measurements taken on the outer edge of cornices add length required for all mitres and intersections.

- Rule 2. Each kind of cornice to be reported separately.
- Rule 3. With each kind or style of cornice give sectional area in inches, reporting the sectional area of plain and moulded stock separately.
- Rule 4. Give particulars as to kind of wood, flashing, furring, brackets, modillions, dentils, ornamental mouldings, etc.
- Rule 5. In case of piazza and porch cornices carry measurements and description across bottom of soffit and up on the inside of beam to point of intersection with the ceiling.

Window and Door Caps. (*Unit of Measure,—Linear Foot.*)

Rules 1 to 4 inclusive as above.

Belts. (*Unit of Measure,—Linear Foot.*)

Rules 1 to 4 inclusive as above.

Water-table. (*Unit of Measure,—Linear Foot.*)

Rules 1 to 4 inclusive as above.

Saddle Boards. (*Unit of Measure,—Linear Foot.*)

Rule 1. Give width and thickness, kind of wood, etc.

Corner Boards. (*Unit of measure,—Linear Foot.*)

Rule 1. As above.

Rule 2. If panelled, moulded, or other than plain, give particulars or sketch.

Lattice. (*Unit of Measure,—Square Foot.*)

Rule 1. Give kind of wood, size and spacing of members, and sketch if of other than plain square, or diamond pattern.

Rule 2. Report each kind of lattice separately.

Sheathing. (*Unit of Measure,—Square Foot.*)

Rule 1. Compute net square feet to cover taking out all outs of 4 sq. ft. or over.

Rule 2. Give particulars in regard to kind of wood, thickness, pattern, etc.

Rule 3. Report each kind and pattern of sheathing separately.

Outside Panel Work. (*Unit of Measure,—Square Foot.*)

Rules 1 to 3 inclusive as for Sheathing.

Columns and Pilasters. (*Report number of same.*)

Rule 1. Give particulars as to size, diameters, lengths, kind of wood, how constructed, etc.

Rule 2. Each size or style to be reported separately.

Rule 3. If any of above parts are shown by scale or other details, refer, with description of said parts, to number of drawing where said detail may be found.

Balustrades. (*Unit of Measure,—Linear Foot.*)

Rule 1. Each kind and style of Balustrades to be reported separately.

Rule 2. Measurements to be net, between posts, buttresses, etc.

Rule 3. Give particulars as to size of rails and bal-

usters, spacing of balusters, kind and quality of wood, etc.

Rule 4. If any of above parts are shown by scale or other details, refer, with description of said parts, to number of drawing where said detail may be found.

Balustrade Posts and Buttresses. (*Report number.*)

Rule 1. Give particulars as to size, diameters, lengths, kind of wood, how constructed, etc.

Rule 2. Each size or style to be reported separately.

Rule 3. If any of above parts are shown by scale or other details, refer, with description of said parts, to number of drawing where said detail may be found.

Steps. (*Unit of Measure,—Linear Foot.*)

Rule 1. Report in total linear feet giving kinds of wood, rise, tread, size and spacing of stringers, and particulars as to thickness of treads, style of nosing, etc.

Note:—All other items of Outside Finish that may be included, to be measured and scheduled according to such units and rules as judgment of estimator determines as logical in view of units and rules above established.

SHEATHING

(*Unit of Measure,—Square Foot.*)

Rule 1. Compute as accurately as possible from scale plans, and figures thereon, the net surface feet of Sheathing.

Rule 2. All openings of 4 sq. ft. or more to be taken out at their full scale or figured dimensions.

Rule 3. Each pattern and kind of wood to be reported separately with particulars.

Rule 4. Sheathing on Bent, Curved, Irregular, or Raking surfaces to be reported separately with particulars.

PANEL DADOES

(*Unit of Measure,—Square Foot.*)

Rules 1—2—3—4 as for Sheathing.

Rule 5. Make sketches, when necessary, to show different styles of dado.

CAPS FOR SHEATHING OR DADOES

To be surveyed and reported under the head of "Chair Rail" and "Dado Capping."

ARCHITRAVES

Door and Window Casings. (*Unit of Measure,—Linear Foot.*)

Rule 1. Compute as accurately as possible from scale plans, and figures thereon, the net linear feet of casings.

Rule 2. Each size, pattern and kind of wood to be reported separately, accompanied by particulars.

Rule 3. All fractions of feet up to 6" to be computed as 6", and all fractions over 6" to be computed as 1'-0".

Rule 4. Bent, Curved or Irregular Casings to be reported separately with particulars.

**EDGE CASINGS AND
WINDOW FRAME VENEERS***(Unit of Measure,—Linear Foot.)*

Rules 1—2—3—4 as for Architraves.

WINDOW STOOLS AND APRONS*(Unit of Measure,—Linear Foot.)*

Rules 1—2—3—4 as for Architraves.

STOP BEADS*(Unit of Measure,—Linear Foot.)*

Rules 1—2—3—4 as for Architraves.

BASE AND MOULDING*(Unit of Measure,—Linear Foot.)*

- Rule 1. Compute as accurately as possible from scale plans, and figures thereon, the net linear feet of Base and Moulding.
- Rule 2. Each size, pattern, and kind of wood to be reported separately with particulars.
- Rule 3. Make sketches when necessary to make matters clear.
- Rule 4. Bent, Curved or Irregular Base and Moulding to be reported separately with particulars.
- Rule 5. All fractions of feet up to 6" to be computed as 6" and all fractions over 6" to be computed as 1'-0".

CHAIR RAILS—DADO CAPPING*(Unit of Measure,—Linear Foot.)*

Rules 1—2—3—4—5 as for Base and Moulding.

PICTURE MOULDING

(*Unit of Measure,—Linear Foot.*)

Rules 1—2—3—4—5 as for Base and Moulding.

FITTINGS AND CABINET WORK GENERALLY

(*No Unit of Measure.*)

- Rule 1. All such parts of inside finish as Cornices, Beamed Ceilings, Mantles, Seats, Wardrobes, Dressers, Medicine Closets, Electric Cabinets, Book Cases, Pantries, China, Linen and Clothes Closets, etc., to be enumerated and described.
- Rule 2. Give such particulars as to kinds of wood, thickness of materials, glazing, hardware, etc., as possible.
- Rule 3. If any of these finish parts are shown by scale or other details, refer, with description of said parts, to number of drawings where said detail may be found.

(EXTRACT)

CONSTITUTION.

ARTICLE I. NAME.

The name of this organization shall be

THE BUILDING TRADES EMPLOYERS
ASSOCIATION OF BOSTON.

ARTICLE II. OBJECTS.

The objects of this Association are:

First: To protect the interests of its members in their relations with labor; to assist and, if requested by any member, to supervise the making of trade agreements respecting the employment of labor by its members; to insist upon the fulfillment of such agreements, both in letter and spirit; to prevent strikes; to protect its members from loss thereby and to promote the settlement of labor disputes.

Second: To provide a means of permitting and encouraging united action, when same is necessary or desirable, to bring about the expressed wish of the majority of the members.

Third: To keep the general public fully informed in regard to questions of organized labor and the ethics of our business, to the end that our members may enjoy public confidence and esteem.

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